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Paper Session II-A - Joint Information Technology Assessment and Resolution - A Strategy for Achieving Systems Interoperability at KSC/CCAS

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Joint Information Technology Assessment and Resolution
- A strategy for achieving systems interoperability at KSC/CCAS

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Situation

The systems at KSC/CCAS may be characterized as a heterogeneous mix of special purpose legacy systems that frustrate interoperability and significantly limit cost effective procurement as illustrated in Figure 1. These systems are becoming increasingly more expensive to maintain and will hamper the ability of the government to readily adapt new technologies and best industry practices into the enterprise. These systems could become a constraining factor to the vision of the future with KSC/CCAS as the premier Gateway to Space.

Strategy

This paper presents the strategies on joint IT problem assessment and resolution leading to implementation of fully interoperable and cost effective IT solutions. SGS offers a focused and comprehensive framework to conduct joint assessment and resolution of IT problem areas from several perspectives, i.e., technical, infrastructure, and managerial. The strategy calls for performing joint project planning in both government and appropriate contractor organizations to define the scope, business objectives, understand IT strategies, and critical success factors in those areas. The strategy will be based on a set of strategic principles for Information Systems, shown in Figure 2, which characterize the target architectures supporting the premier Gateway to Space. Additionally, the strategy will jointly assess current and planned technology projects; system operational efficiencies; business practices; and core management capabilities for their business and technical value as shown in Figure 3.

Implementation Overview

The joint assessments, taken from the perspectives mentioned above, result in project plans that address migration paths, transition plans, and alternative solutions based on mutual cost benefit considerations. An event horizon would be established with roles, responsibilities and completion dates for each area, paying particular attention to those that are mission-critical.

The activities of the joint assessment team, comprised of Government and contractor representatives from all IT areas and disciplines, would be coordinated by SGS. The activities of focus groups would be co-facilitated by both SGS and affected government and contractor organizations to assess risks, management methodologies, standards and procedures, processes and issues critical such as Human Resources, contractual considerations, service level agreements and skill levels. Technology acquisition, legacy migration issues and new requirements would be documented and jointly scheduled for optimized mutual benefit. Existing and future plans would be reviewed and modified to assure smooth transition.

Anticipated Benefits

The basis for the disciplines incorporated in the strategy will be a joint set of Government- and industry-accepted standards, guidelines, and processes based upon a common operating environment that will help:

- Standardize an application infrastructure that reduces long-term operations and maintenance costs.
- Significantly increase reuse of software components and reduce the cost of developing custom software.
- Increase the use of COTS while maintaining interoperability among existing IT components.
- Offer an application-independent presentation layer that will minimize user-training costs and improve cross-functional integration.
- Fully support the engineering disciplines required for the transition from the current environment to one that is fully integrated and highly interoperable.
- Fully comply with SEI CMM Level 3 for Software Engineering processes.
- Fully comply with ISO 9001 instructions and take advantage of inherent flexibility to meet the anticipated commercial demands of the Premier Gateway to Space.

Management Process

SGS has developed a process, shown in Figure 4 that will enable making the best use of its personnel and the activities of the joint assessment team from the current environment through the implementation of joint recommendations. The process provides a simple mechanism for conducting technical integration across the continuum to the vision. The process is centered on an Enterprise Integration Team (EIT); a group of senior experts with the responsibility for overall responsibility in conducting, coordinating and facilitating the joint assessment of all tasking that will be required. The major focus of the EIT will be to facilitate the tasking across all of KSC/CCAS for assessment and implementation and to ensure consistency in task responses.

The EIT provides the following benefits:

- Value-added, enterprise integration services that transcend current contractual and business area boundaries

- Centralization of key technical resources to improve technical recommendations and responses to technical tasking resulting from the assessment and its recommendations directions without the overhead of a separate organization
- Integrated technical and program management to continue improvement of contractual performance and product quality.

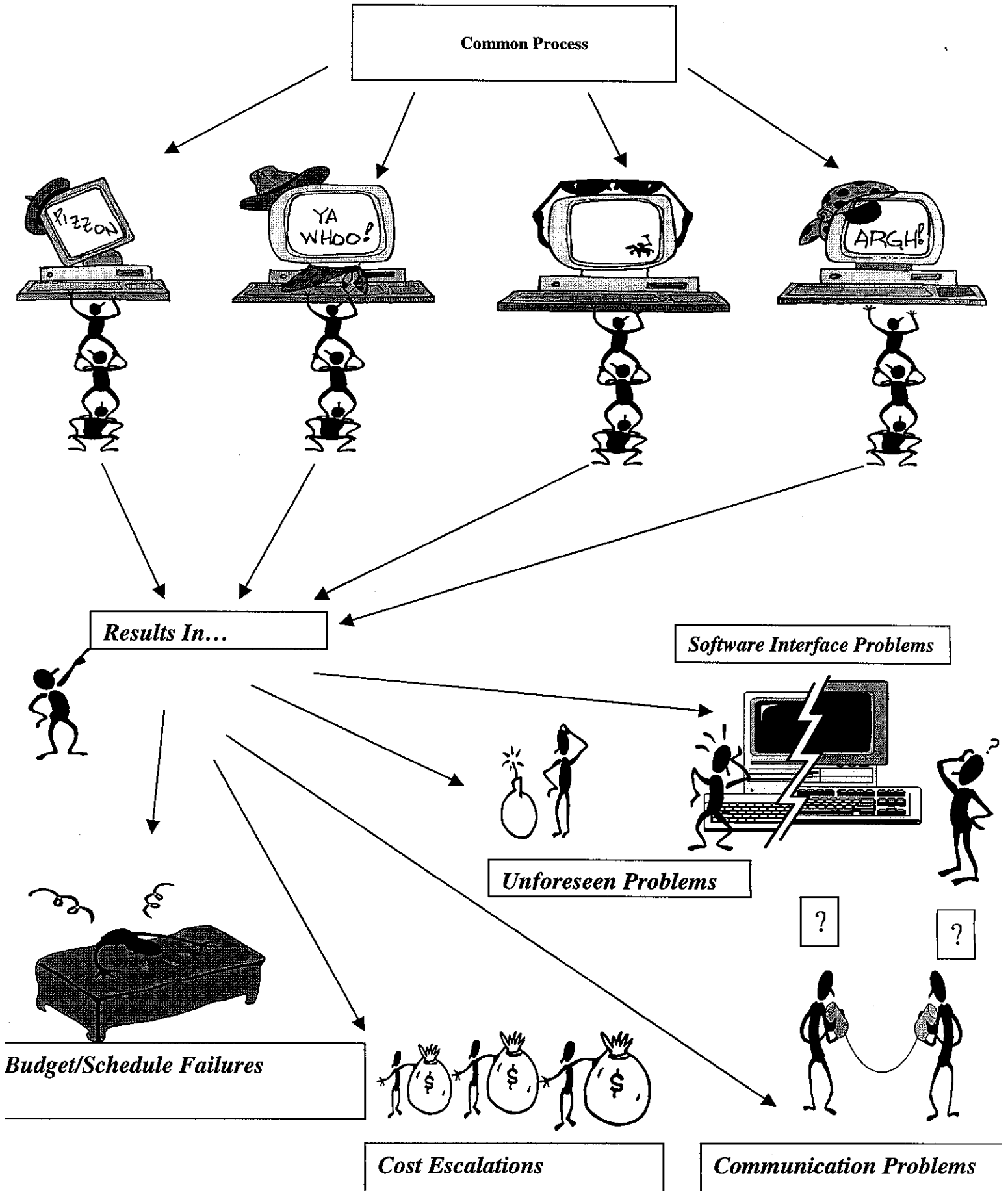
Summary

The framework just discussed establishes a synergistic relationship between the activities that support the current KSC/CCAS mission goals with the ultimate goal of KSC/CCAS as the premier gateway vision. The synergy of this relationship will be embodied in a set of technical, management and infrastructure analyses and activities that help ensure a high degree of cost benefit in current KSC/CCAS activities while minimizing the rework required for achievement of the premier gateway vision.

The proposed SGS process will facilitate and coordinate joint assessments of actions and proposed directions or recommendations that lead to fully interoperable, cost-effective systems, infrastructure and management best practices that position KSC/CCAS as the preferred Gateway to Space. The process will also permit the infusion and modeling of other technologies and standardization efforts, such as the Defense Information Infrastructure Common Operating Environment (DII COE) that have brought the realization of seamless, cross-functional integration closer to reality.

SGS stands ready to fully participate in the previously discussed activities that facilitate the correct and cost-effective application of Government and industry standards and the insertion of key technologies. The result will be the creation of a robust, seamless, and interoperable computing and communications infrastructure that will permit KSC/CCAS to realize the vision as the preferred Gateway to Space.

Figure 1. What happens when different contractors, using different skill sets implement a common process on different platforms at different times on different contracts.



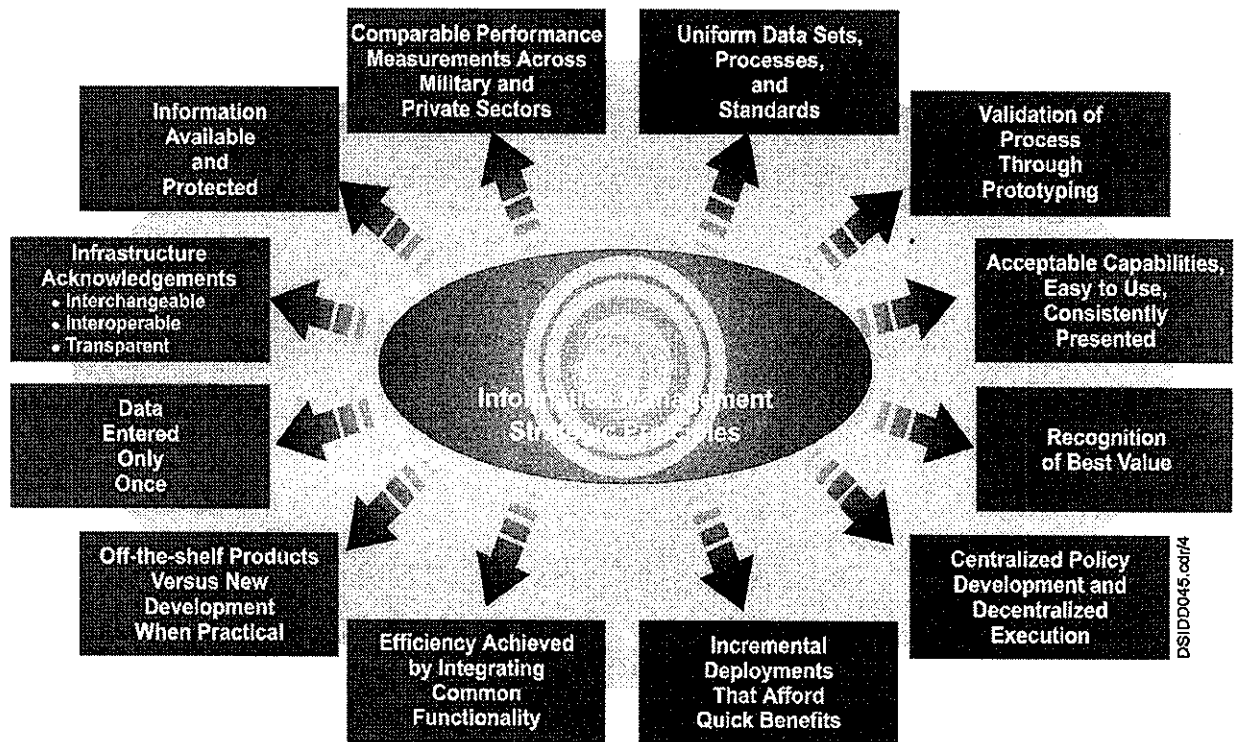


Figure 2. Strategic Principles for Information Management Systems at KSC/CCAS

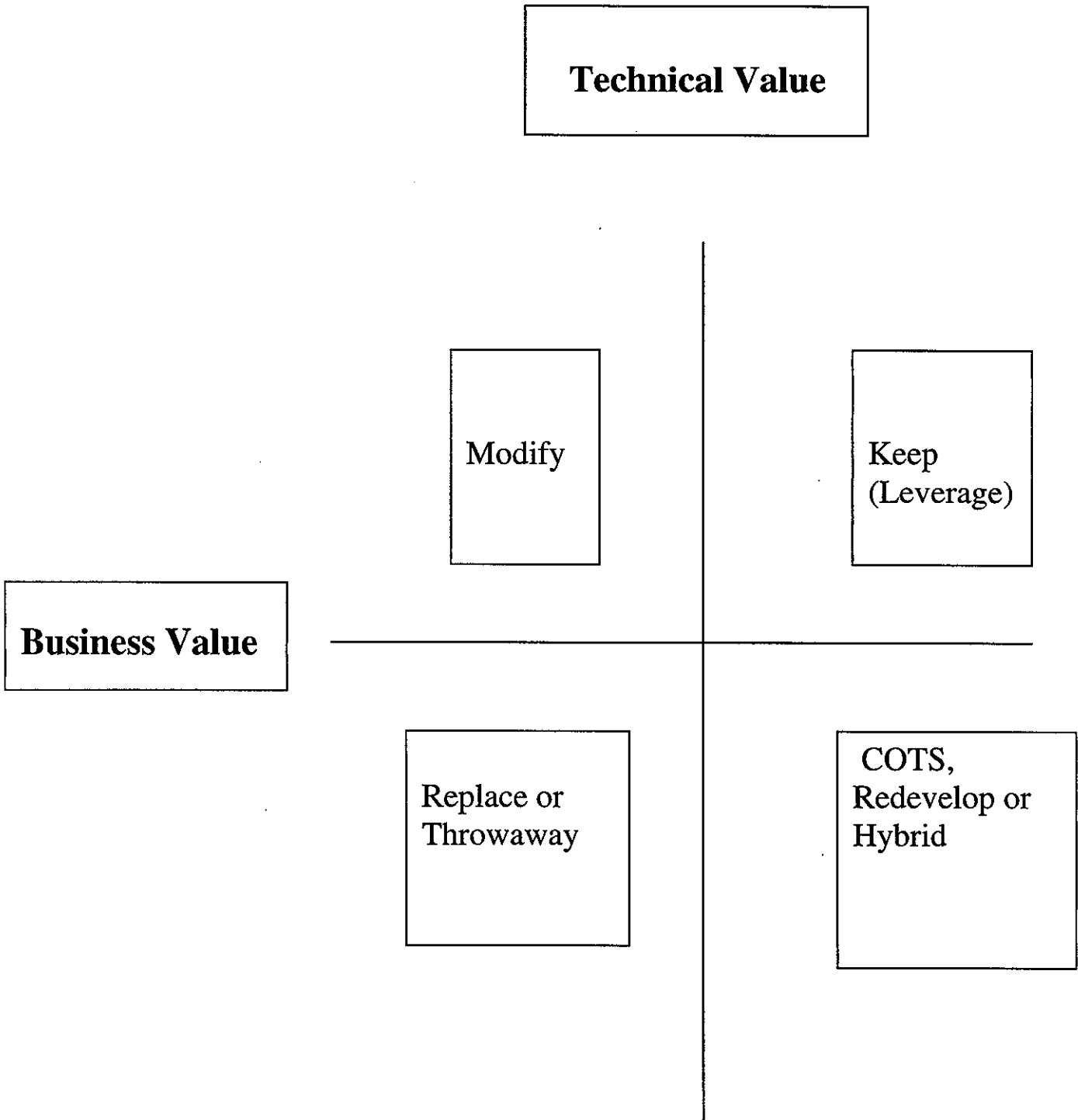


Figure 3. Determination of Business Value vs Technical Value

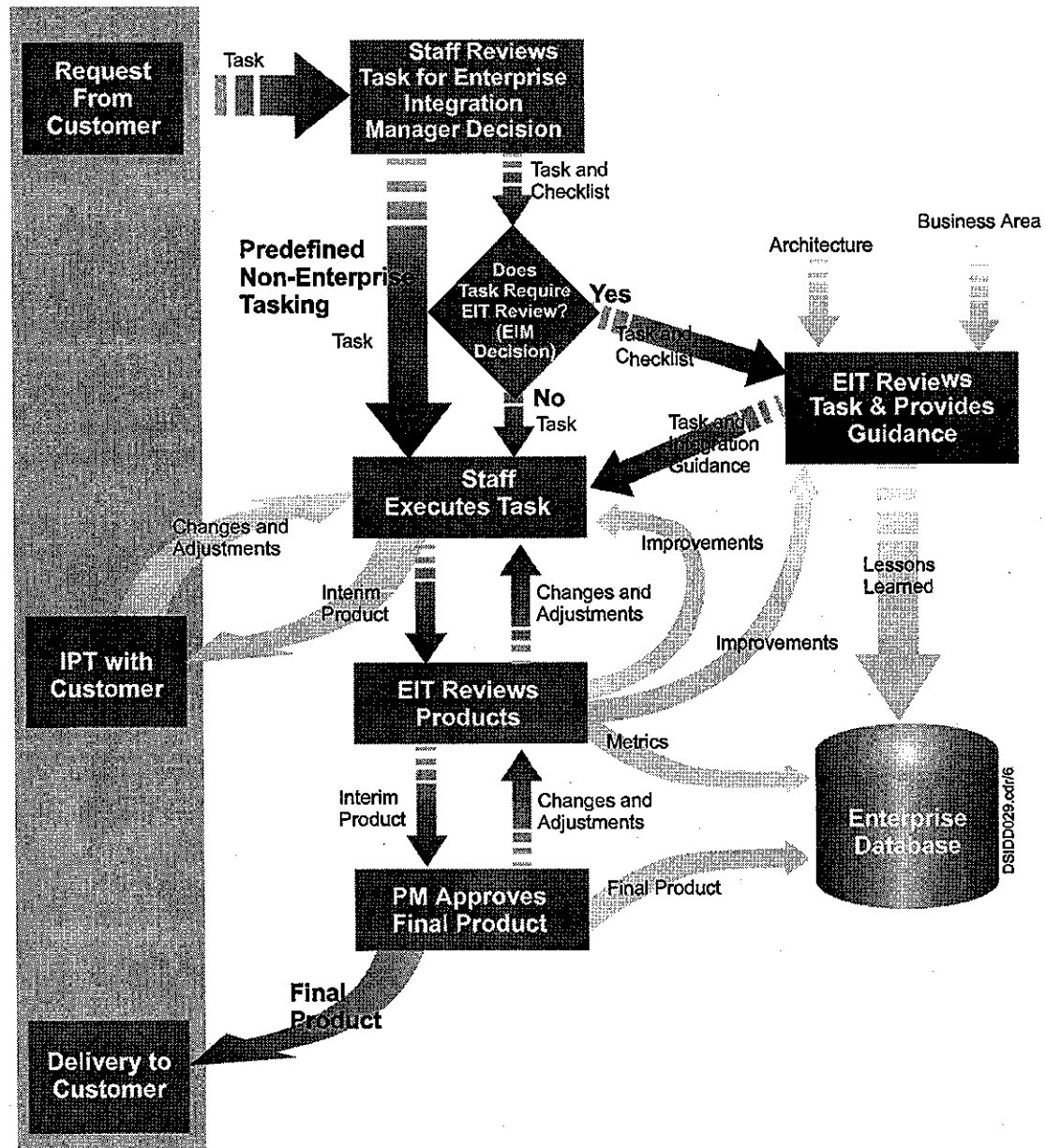


Figure 4. The Enterprise Integration Team provides facilitation, coordination, technical and integration support throughout the entire assessment and resolution cycle.